

Identifying Causes for Emergency System Overload and Alternative Types of Medical

Assistance

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October 13, 2010

Abstract

The Copley Fire Department (CFD), like many other governmental agencies, desires to reduce their operating budget while maintaining or increasing the service it provides to the community.

By completing descriptive research, using the following questions,

1. How can Emergency Medical Service providers successfully differentiate between emergent and non-emergent medical calls for assistance?
2. What types of medical services does the public expect to receive upon requesting the Emergency Medical Service?
3. Why do citizens request non-emergent medical treatment from Emergency Medical Services?
4. Are there alternative approaches that will reduce the number of non-emergent Emergency Medical Service incidents, while meeting the public's needs for medical assistance?

it has been determined that the Copley Fire Department (CFD) can provide alternative types of medical assistance to the community and the CFD will be able to alleviate the problem of increasing call for service volume and increasing response times. By reviewing response procedures used in other communities, both domestic and abroad, and questioning the public on they believe the 9-1-1 system is expected to provide has resulted in alternatives to current response guidelines. By implementing a tele-triage system the public can receive proper services while freeing up emergency response units. The evaluation of similar services has revealed that prioritizing calls for service and providing the public with an alternative to the use of 9-1-1 has resulted in positive outcomes for both the public and the emergency medical service (EMS). A

diverse program comprised of call for service prioritization, alternative medical assistance options and a comprehensive system evaluation process can result in reduced response times and diminished EMS abuse, while meeting the public's medical needs and expectations.

Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions or writings of another.

Signed: _____

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Introduction

One of nine townships in Summit County, located in Northeast Ohio, Copley Township is a suburban community located on the western boundary of the city of Akron. Like most communities around the nation, Copley has fallen prey to the 2008 economic downturn. With a population of 13,641 people, the Township is served by a combination of full-time and part-time professional firefighter/paramedics. The Copley Township Fire Department (CFD) is composed of two fully equipped stations, one that is dedicated solely to Copley Township, while the other is jointly operated with a neighboring township.

As seen on the national level, the CFD has become susceptible to a problem that has become known simply as “frequent flyers”. Frequent flyers are those individuals who abuse the privilege of having an emergency medical response system available, using the system for non-emergent health care situations. A nonemergency medical condition is defined as “care or services furnished in an E.R. of a hospital that do not constitute an appropriate medical screening examination, stabilization and treatment required to be provided by the hospital under EMTALA” (Health Management Associates, 2008, p. 8). Some of these individuals are known to use 9-1-1 for non-life threatening reasons frequently, sometimes even daily (Kavilanz, 2009). Frequent flyers know the ethical commitment made by fire departments and emergency medical services to take every call with absolute seriousness, and exploit this dedication to the fullest. This, coupled with the Township’s need to manage an already dwindling budget situation that prevents the department from being able to purchase the needed additional medical units, has

limited the department's ability to service the community. The problem is that an increasing volume of non-emergent medical service requests treated as emergency incidents is causing a reduction in emergency medical unit availability and an increase in emergency medical unit response time. This problem is believed to have a correlation to the high average age of Copley Township residents and their limited access to professional healthcare. This predicament will ultimately result in poor patient outcomes and an increase in liability claims against the department.

While some may consider frequent flyer calls part of the job, in reality they cause major problems to all departments affected by this epidemic. By spending time and resources on so many non-life threatening requests, emergency workers' ability to respond when actually needed is hindered. A lieutenant of a fire department in South Florida claimed that more than 80% of the 9-1-1 calls he answers are routine general health calls that would be better addressed by a doctor or nurse (Kavilanz, 2009). The detrimental effects then trickle down to the general public, who in emergency cases could be left waiting while a non-emergent patient monopolizes the resources. The inability of an emergency worker to say no leaves them inclined to respond to every call, in turn causing response times to actual emergencies to increase dramatically.

The purpose of this descriptive research is to identify the causes for non-emergent Emergency Medical Service incident volume and alternatives to emergency response to these non-emergent patient care requests. Through the implementation of these alternative approaches, the public will have the ability to reduce its dependence on the Emergency Medical Service, leading to a reduced incident volume and an improved emergency response time.

Through descriptive research, this paper will serve the purpose of evaluating data on the subject, discussion and implementation of a solution to the problem seen by the CFD, as well as give answers to the following questions:

1. How can Emergency Medical Service providers successfully differentiate between emergent and non-emergent medical calls for assistance?
2. What types of medical services does the public expect to receive upon requesting the Emergency Medical Service?
3. Why do citizens request non-emergent medical treatment from Emergency Medical Services?
4. Are there alternative approaches that will reduce the number of non-emergent Emergency Medical Service incidents, while meeting the public's needs for medical assistance?

Background and Significance

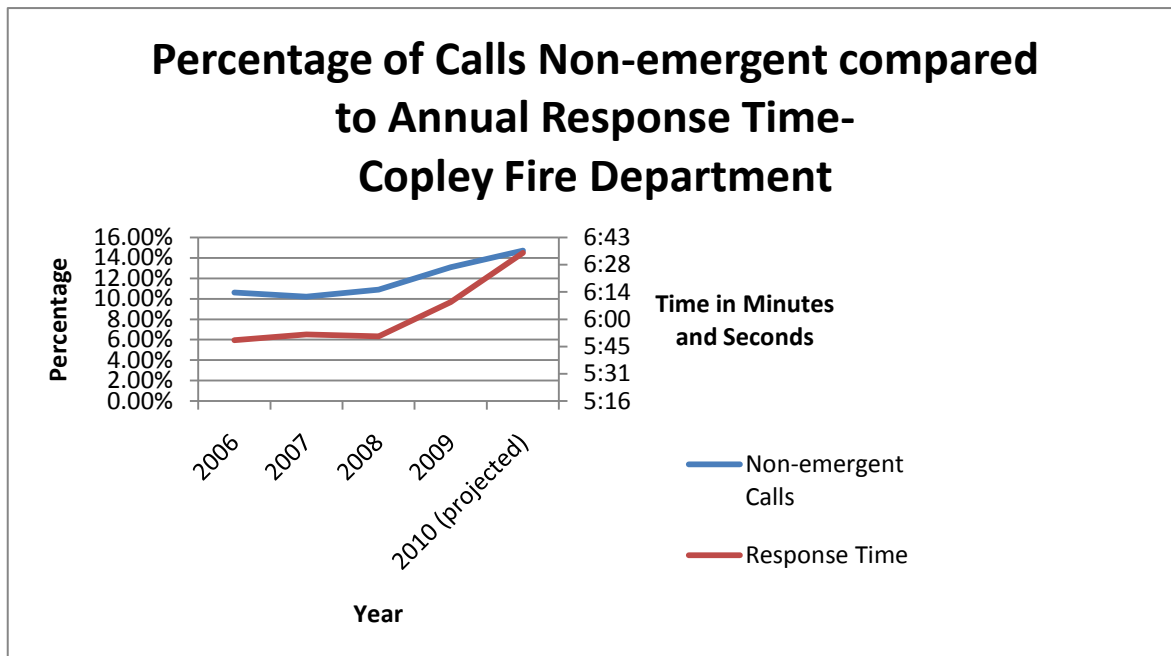
Copley Township is a suburban, bedroom community located directly west of Akron, Ohio. With a residential population that has more than tripled from 4,348 people in 1970 to 13,641 today, the township is known as a quiet retirement community with a plethora of nursing homes, assisted living, and retirement facilities. The influx of these types of dwellings began in 1987 with the opening of Chambrel, a 210- room retirement complex. Since 1987, Copley Township has increased its number of elderly care facilities from two to nine. This increase of retirement homes, along with a population surge seen through the past 22 years, has brought about changes in the Copley Township Fire Department.

In 1991 the CFD personnel consisted of three career firefighter/paramedics and twenty-four part-paid/volunteer firefighters, EMT-As and paramedics. Present day, the department consists of eighteen career firefighter/paramedics and forty-five part-time members.

Proportionately to the increased number of crew members in the department, the number of emergency service requests has also increased. Responding to 1,131 calls in 1991, the department's call load has nearly doubled since then, answering 2,452 requests for emergency services this past calendar year.

Paired with the increase in the overall call volume of the department, an increase in the number of non-emergent calls can also be identified. These calls are classified as non-emergent by either the CFD member who responds to the call or by the emergency room physician on hand at the time. After being identified, call data is recorded and presented in yearly patient dispositions distributed by the department. In 2006, non-emergent calls represented 10.6% of the total call volume, while in 2009, 13.1% of calls received were for non-emergent reasons. Based upon the first two quarters of 2010, the percentage of non-emergent calls is predicted to escalate again to 14.7%. As seen in Table 1 below, there is a steady increase in the percentage of non-emergent calls received by the CFD which can be directly correlated to an increase in response time seen throughout the department.

Table 1 – based upon data obtained from Copley Fire Department call queries.



This applied research paper is related to the *Executive Development* course, as instructed in the April, 2010 class, on several levels. The first of four courses, the *Executive Development* course addresses different types of research, how to evaluate departmental needs and change management (U.S. Department of Homeland Security, 2008). These qualities are essential to organizational management in order to self-evaluate and bring about needed change that promotes success for the organization's mission statement. Further, this applied research paper adheres to two of the United States Fire Administration's operational objectives. By improving emergency response capabilities while adequately maintaining the public's needs for health care, the CFD can improve its professional status and its service levels.

Literature Review

Upon reviewing the body of literature regarding alternative health care for non-emergent medical needs, it became evident that it was going to be difficult to narrow the subject parameters down to specific key points. The articles had to relate directly to the proposed

research questions below along with what expectations needed to be fulfilled by health care to succeed in the public eye.

1. How can Emergency Medical Service providers successfully differentiate between emergent and non-emergent medical calls for assistance?
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3. Why do citizens request non-emergent medical treatment from Emergency Medical Services?
4. Are there alternative approaches that will reduce the number of non-emergent Emergency Medical Service incidents, while meeting the public's needs for medical assistance?

After identifying what the residents and guests of Copley Township had come to rely upon and expect from their emergency services, the research of this paper turned to literary sources as well as professional opinions for support on the topic of how to efficiently and cost effectively respond to these publicly demanded needs.

Through the extensive research process multiple written resources were tapped in order to gain more knowledge on the subject. These sources claimed a multitude of different reasons for why the abuse of emergency services is occurring, but the one response taken from all of the sources used was that the amount of non-emergency calls is a definite problem seen throughout the world of emergency workers. A basic concept was expressed in multiple resources, when call volume goes up; response time increases as well (Diverting Frequent Flyers, 2008). A

metro EMS in Louisville, Kentucky estimated that 20% of their 130,000 dispatched calls were classified as low-priority (Donatelli, 2010). One study showed that 22% of EMS calls were from abusive individuals (Shah, Swanson, Rajasekaran, & Dozier, 2009). A similar study done in Florida showed that on a yearly average 15% of calls received in the St. Petersburg area and 16% of calls received in the Tampa area were calls that would have been better handled by a personal doctor or even a drugstore worker (Nipps, 2009). The problem can also be seen in Kansas, where an EMS captain claimed that 50% of their 35,000 9-1-1 calls were not emergencies (Kavilanz, 2009). This epidemic is not limited to the United States but is present in many countries throughout the world. The demand for ambulances in the United Kingdom has risen at a rate of about 4% per year for the last 10 years (Kawakami, Ohshige, Kubota, & Tochikubo, 2007). In Yokohama, Japan out of 157,371 calls, 60% of individuals returned home without any special treatment or hospitalization (Kawakami, Ohshige, Kubota, & Tochikubo, 2007).

This problem not only decreases productivity of departments and patient treatment, but the effects can also be seen from a financial standpoint. In further review of literature, it is evident that one of the key components to provide alternative approaches to non-emergent medical needs is funding. Such funding could be needed to initially train dispatchers to properly triage incoming calls for service and/or hire physician assistants and nurse practitioners to provide field treatment to non-emergent patients. Adequate funding or means to have access to Federal and State medical insurance programs, such as Medicare and Medicaid, is a must in order to make this program successful. Recent changes seen in Louisville, KY, EMS are to be funded by the projected cost savings through a decreased usage of paramedic staffed ambulances

(Garza, 2006). In Washington D.C., hiring of nurse practitioners is not an issue of funding but rather as mandated spending based upon a court ruling due to medical liability case awards (DC Fire and Emergency Medical Services, n.d.). At an average cost of \$300 per trip, unnecessary ambulance rides are costing local governments billions of dollars nationwide (Nipps, 2009). The effects of these frequent fliers will only increase, as the number of annual emergency calls in the United States was projected to triple over a twelve year period ending in 2012 (Bagwell & Keith, 2009). Along with these effects, the stress felt by the emergency workers themselves is the most damaging problem caused by frequent flyers and the abuse of emergency medical services. Firefighters are forced to exhibit a totally different attitude when dealing with nonemergency calls, needing to have more patience and compassion for non-emergent patients, rather than when dealing with the normal action-oriented problems that can easily be solved (Pedrotti, 2009). The monotony of response to non-emergent calls can also lead to profession apathy. This professional apathy can result in decreased quality of patient care as well as personal risk to providers. This shows that the abuse of emergency services is not only hindering the on-scene performance of departmental personnel, but actually changes the work environment completely.

Tele-triage, the management of patient health concerns and symptoms via a telephone interaction by trained professionals, is a possible solution to this challenge and has been implemented in some systems. In the United Kingdom, a new number has been put into effect concerning nonemergency health information. 1-1-1 is being piloted in some parts of the United Kingdom to allow the Department of Health to make the best use of their telephone resources, giving easy access to nonemergency healthcare, eventually for the entire nation (Directgov,

2009). One tele-triage system, put into action in Philadelphia, PA, lead to a reduction of non-emergent transports of 30%, projecting a savings of \$2.5 million annually (LifeBot, 2010). Even with such a high projected savings, present systems can still be improved to better serve the public. A medical home model, used as a form of at-home triage, was initiated for Texas Medicaid recipients. Even with the medical home model in place, 47% of emergency room visits by Texas Medicaid recipients were still being classified as not true emergencies (Health Management Associates, 2008). This emergency service abuse created the astonishing figure that “of the \$307 million spent on E.R. services in the state fiscal year 2005, \$121 million was for nonemergency services,” showing that a definite improvement in current systems is needed before non-emergent health care alternatives can be considered a successful service (Health Management Associates, 2008, p. 6).

Procedures

The first task taken when planning this project was to develop a hypothesis of what the Copley Fire Department was currently facing or would face in the future as the most distinct problem in the department. The review of budgets, call for service and departmental staffing over the previous four years revealed that calls for service volume was increasing annually while response times to emergencies were also increasing. Initial indications were that possible abuses of emergency health care systems for non-emergency situations were the likely suspect for the diminishing effectiveness. From the development of this hypothesis the following research questions were developed.

1. How can Emergency Medical Service providers successfully differentiate between emergent and non-emergent medical calls for assistance?
2. What types of medical services does the public expect to receive upon requesting the Emergency Medical Service?
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The same questions and more were asked with respect to the problem on a national fire service level. Was this a common issue seen across the EMS profession? Were there solutions already out there that had been implemented by other departments or health care providers? Could this crisis be broken down into smaller, more distinctive parts that would be addressed individually and in stages? Answers to these uncertainties had to be formulated in order to properly fulfill the high standard of criteria set by the National Fire Academy.

Once the criterion had been met, a more in depth look was taken at how this problem directly affected the CFD. After careful evaluation of current response reports and how these reports correlated with historical data and projections for future conditions, a hypothesis was derived that the annual increase in non-emergent calls for service resulted in increased average response times. This preliminary research highlighted the struggle CFD faces today as the department attempts to maintain the level of service the residents and guests of Copley Township have grown accustomed to while adjusting to decreases seen in both staffing and budget level.

After conducting research on call volume, an increase became apparent in the areas of calls for service as well as the amount of these calls for service that would have been better dealt with by non-emergency health service providers, if at all. This problem, commonly referred to as frequent flyers, is created by those individuals that are unable to access medical professionals in manners other than calling 9-1-1.

In a recent interview with Francis Mencl, MD, MS FACEP, the director of EMS activities for Summa Health Systems and associate professor of Emergency Medicine for Northeastern Ohio University Colleges of Medicine and Pharmacy in Akron, Ohio, at CFD on August 26, 2010, several questions were asked to gain Dr. Mencl's professional opinion on the subject at hand. Questions included, but were not limited to:

- The topic of public health care needs and the ability of an alternative transport fulfilling these needs.
- Dr. Mencl's familiarity with "tele-triage" and other means of servicing patients through communication/dispatch centers.
- Dr. Mencl's opinion of allowing trained dispatchers to assign different responses to emergency calls based upon set criteria.
- Dr. Mencl's personal awareness of other communities or countries that provided alternative medical care for calls deemed non-emergent based upon set criteria.

According to Dr. Mencl, many other countries use alternatives to emergency department visits including: direct appointments to specialists, visits from nurse practitioners and visits from a paramedic in a quick response non-transporting type vehicle. Dr. Mencl discussed a program

he was involved in that took him to Amsterdam for two years in a doctor swap program. This experience allowed him to witness how European countries practice emergency medicine, such as how Holland uses medic motorcycle responses to deal with non-transporting situations. Dr. Mencl also explained how primary care physicians in Amsterdam are assigned to patients in need of non-emergent medical care based on the patient's ability to gain transportation, treatment required and ability to pay for such care. Dr. Mencl acknowledged that public health needs could be better served by alternative means of transportation but not in the case of Copley Township due to the current health care system present in Summit County, Ohio.

With concern to the question of whether or not dispatch triage can be a reliable emergency medical alternative, Dr. Mencl claimed that certain criteria must be met in order to avoid causing more harm than good. First, Dr. Mencl stated that the need for thoroughly trained call takers is of the highest importance; this could be insured through extensive quality assurance checks. Along with highly trained dispatchers, there must also be sufficient means and funding available to deliver the alternatives to Emergency Medical Services readily for non-emergent public use. Dr. Mencl then went on to describe TORT reform that must take place, holding EMS systems responsible for wrong doing, while not financially debilitating a community in the event of a poor patient outcome. Citing a TORT case in Washington D.C. several years ago, Dr. Mencl explained a situation in which a wealthy household lost a family member due to the inappropriate response of the city's EMS system. After the city was found at fault in a court of law, rather than asking for a monetary settlement, the family asked that the city be forced to reevaluate their EMS system and implement changes that would prevent similar situations from

happening in the future. This settlement allowed the city to expand resources and bring about positive changes rather than financially crippling the department (DC Fire and Emergency Medical Services, n.d.).

While familiar with many communities that use or have used some type of dispatch triage system, Dr. Mencl has become wary of such systems due to the varying levels of success seen throughout cities across the world. Discussing a liability lawsuit which occurred in the 1980's, Dr. Mencl explained how Dallas, Texas was found liable for a patient's death due to the delayed response to a critically ill patient that had been given a low response priority by a dispatcher. Due to incidents like this, Dr. Mencl is only in favor of dispatch triage systems if all calls for service receive some level of care. Admitting that you don't need to send "a transport capable rig with three paramedics to a patient with a swollen wrist that was a result of a fall yesterday," Dr. Mencl feels the need to treat every call with a professional level of concern is a must. While all patients must be seen in some manner, the doctor explains that you "don't need to send a cement truck to deliver a pizza" (F. Mencl, personal communication, August 26, 2010).

Dr. Mencl himself has performed extensive research in the field of alternatives to non-emergent health care requests as well as emergency response. While claiming that the current system in the United States is the best emergency response in the world, Dr. Mencl emphasizes a need for an improvement in non-emergency responses across the country. Referring to his time spent in Holland, Dr. Mencl explained how the Dutch emergency health system allows paramedics the ability to treat and release patients in the field, removing the need for

transportation all together. This freedom given to emergency workers would allow for a more responsible non-emergency response system and could be successful if implemented in the United States.

As a result of the information received from Dr. Mencl during this interview, it became necessary to inquire whether or not Dr. Mencl believed Summa Health System would be receptive to an operational change that would allow for some type of medical evaluation and/or treatment for non-emergent medical needs in an out-of-hospital setting. Dr. Mencl explained that Summa recently made similar changes to their operational procedures. Over the past several years Summa Health System facilities, located in Summit County, Ohio, have been struggling with overcrowding in the emergency departments, which has in turn caused a back up in receiving patients. Dr. Mencl further explained that as EMS units arrive in the emergency departments they must transfer patients to hospital personnel of the same or greater hierarchy of a health care professional. An example of this can be seen in the way a paramedic can only transfer a patient to another paramedic, nurse or doctor. Simply bringing the patients to the hospital and leaving the patient in the admittance office does not meet the standards set by the Ohio Revised Code Chapter 3701 (Ohio Revised Code, 2000). For years, the Summa Health System emergency departments have dealt with arriving EMS units having to wait for a nurse or empty bed to transfer patients. EMS members have routinely waited up to two hours throughout a four year period, with an average door to door patient transfer rate of 37 minutes. This problem has become acutely relevant as EMS systems struggle with diminishing hospital staff and the inability to remain out of service for extended lengths of time. The recent operational

changes were set in place to eliminate this waiting period experienced by EMS units. Under Summa's new operational guidelines, additional paramedics have been hired. These new employees, paired with the purchase of new ambulance cots, allow arriving EMS teams to not be forced to wait for available hospital personnel but rather allows them transfer their patients to a paramedic employed by Summa. Placing their patient on a hospital ambulance cot in the hands of equally trained paramedics, the EMS workers will have the ability to return to service as quickly as possible. Summa's decision to hire in-house paramedics could easily be enlarged to include in field units, similar to the system in Amsterdam explained earlier by Dr. Mencl.

In a phone interview with Julie Rose, President of the American Ambulance Association and Michele Skinner, Director of Patient Accounts for LifeCare, Inc and Reimbursement Chairperson of the Ohio Ambulance and Transportation Association, on September 1, 2010, it was learned that many U.S. cities and communities are seeing their hospitals emergency departments overwhelmed with patients; specifically patients that would better service their health care needs in manners other than emergency department visits by accessing the 9-1-1 system. Ms. Rose explained that the American Ambulance Association, an association consisting of both public and privately owned ambulances and providing both emergency and non-emergency medical services, has been pursuing Medicare and Medicaid legislation changes that would allow for payment needed for in field medical services rendered to patients covered by these government funded health care plans. In the past two years, lobbyists for the American Ambulance Association have presented legislation to officials in Washington D.C. that would change payment line items to Medicare/Medicaid's list of acceptable and collectable health care

treatments. Treatments including field assistance of non-urgent medical needs including but not limited to; medical evaluation and referral to clinics, obtaining appointments with medical specialists, as well as basic treatment and release (J. Rose & M. Skinner, personal communication, September 3, 2010).

Once enough background information was obtained through the interview process, the first objective in solving the problem at hand was to distinguish the difference between emergency and non-emergency situations based upon the opinions of both the public as well as healthcare professionals. A source gave example conditions for both categories that can be seen in Table 2.

Table 2 – Examples of Emergency and Nonemergency Conditions

<i>Emergency</i>	<i>Nonemergency</i>
Chest pains	Common cold
Broken bone	Sore throat
Excessive bleeding	Stomach ailment
Poison or drug overdose	Vomiting
Severe allergic reaction or animal bite	Headache

(Health Management Associates, 2008, p. 6)

Taking the cited information in Table 2 into account, a questionnaire was created that consisted of 20 different medical situations ranging in severity that was then given to a variety of groups, who were asked to classify the conditions as either emergent or non-emergent in nature. First a visit was made to the Summa Health Care and Akron General Medical Center, where the

opinions of sixteen emergency room doctors were received through the questionnaire. After the doctor's results were obtained, six retirement/nursing home facilities were visited where twenty-one registered nurses and licensed practical nurses were given the questionnaire to fill out. The final field of professionals surveyed was fire department personnel, where a total of sixty-two emergency medical technicians' opinions were obtained.

After the professional sector of the study was received, three different groups of the general public were given the same list of 20 medical circumstances and asked to classify each individually as emergent or non-emergent in nature. First, forty-nine people of the age 66 years and older were asked, all of these individuals having current health care. Following the oldest sample group, two more public groups were sampled. Both within the age range of 21-65, one group consisted of members with current health care coverage in affect and the other being made up of individuals with no active health care coverage.

Through a combination of the data obtained from the questionnaires, the interviews performed and extensive literary research, a final attempt was made to differentiate between emergency and non-emergency calls for medical service. Not only was the criteria of situations set by medical professionals to be classified as emergent and non-emergent in nature identified, but the expectations and standards of the public towards emergency workers were also learned. Once differences were distinguished between what the public believed emergency medical service systems were for versus what types of aid are actually provided, a way to make both categories consist of the same criteria had to be identified, while taking both financial and

employment limitations into account as well as maintaining the high standards that have come to be expected from CFD.

The initial step taken to identify a possible solution was to evaluate improvements made by other communities and countries with regard towards the same subject. This was done through both research and interviews with medical professionals that face the problem every day. These experts were chosen not only for their experience with the dilemma but also due to their ability to impact change within the system, bringing improvement to the current arrangement. Finally, the research and interviews were used to determine the reality of implementation of these changes occurring based strictly from a fiscal standpoint. Only if all of these standards set by both professionals and the public could be met would the solutions presented be considered satisfactory.

Several limitations were identified during the compilation of information used within this research document. These limitations include the following:

- The inability to properly identify emergency calls for service through the department's *Firehouse Software* digital information tracking system. Due to a number of different individuals entering call for service information into the software system, the entry designations were not always the same due to the subjectivity of the system. Therefore, the information retrieved was not always the statistically reliable. This caused the researcher to evaluate individual calls for service and determine if the call should have been labeled non-emergent based on the researcher's criteria.
- Upon performing the questionnaire the researcher found that giving directions to the elderly sample group led to confusion at times. For example, four of the respondents in

the 65 years of age or older group failed to check the box when asked if the description represented a true emergency. Upon questioning the individual about their answer on all four occasions, their answer was they were unsure about what was being asked.

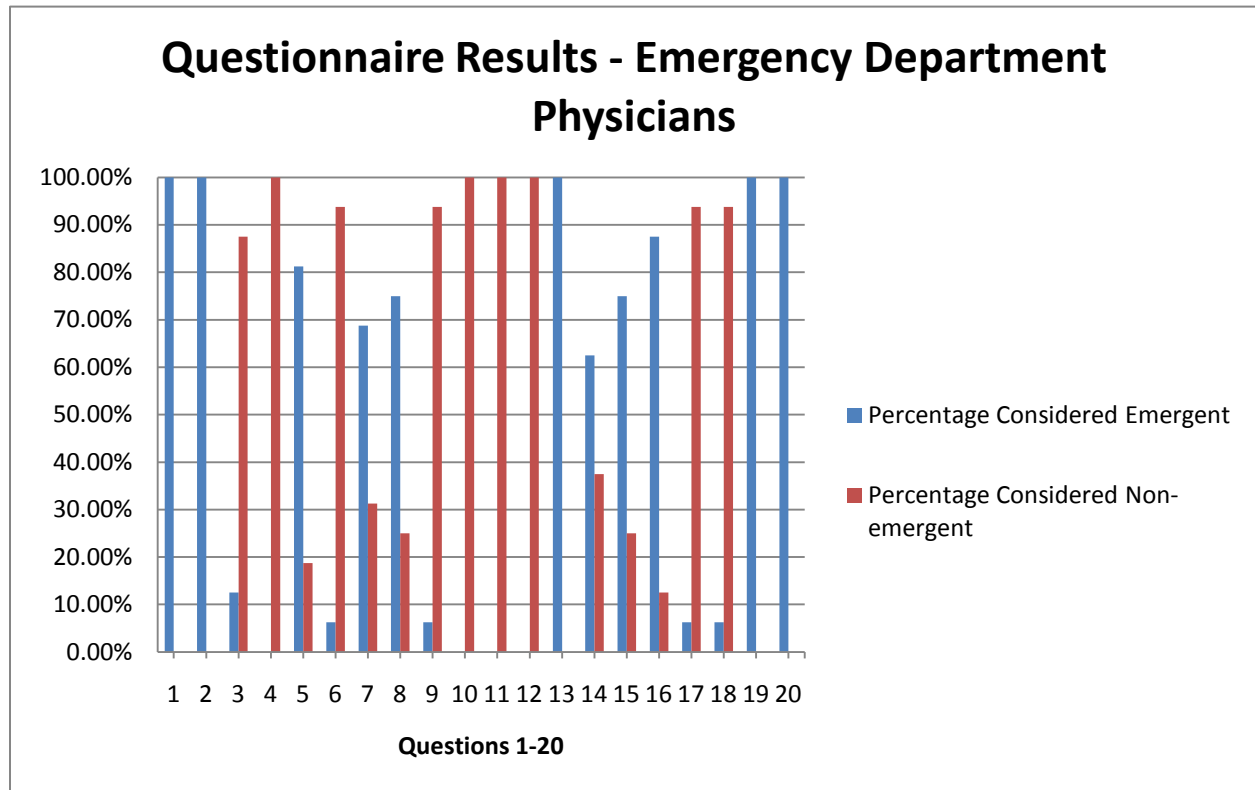
- The researcher was unable to locate similar sized communities with a selective dispatch system. A majority of the references used to determine possible alternative approaches to providing health care for non-emergent patients came from communities that have call for service volumes much greater than the CFD's call volume. Thus, the information gathered needed to be analyzed for relevancy.

Results

Questionnaire results were broken down into two sectors: professional and public.

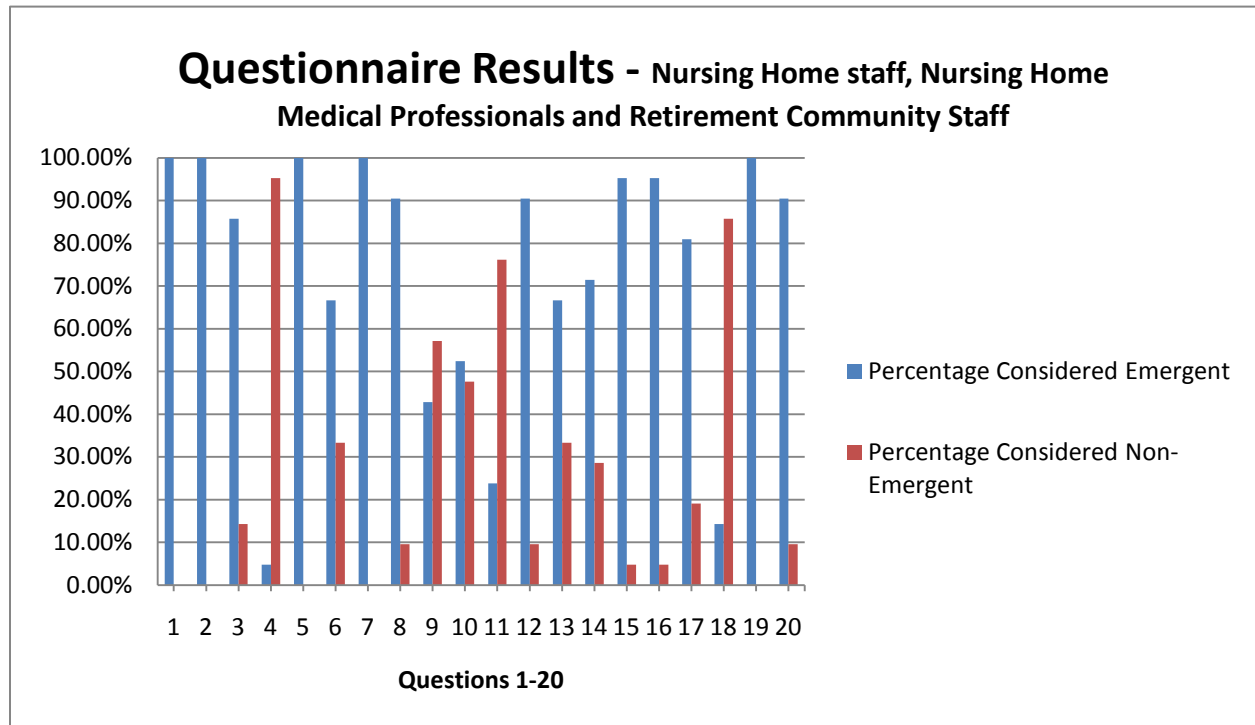
Professionals queried on the subject include emergency room physicians, nursing home staff, nursing home medical professionals, retirement community staff, and pre-hospital emergency medical technicians, basic through paramedic. These results were then separated and analyzed based upon the nature of the professionals' expertise and knowledge of the subject. Table 3, on the next page, shows questionnaire answers from 16 emergency room physicians sampled.

Table 3 -



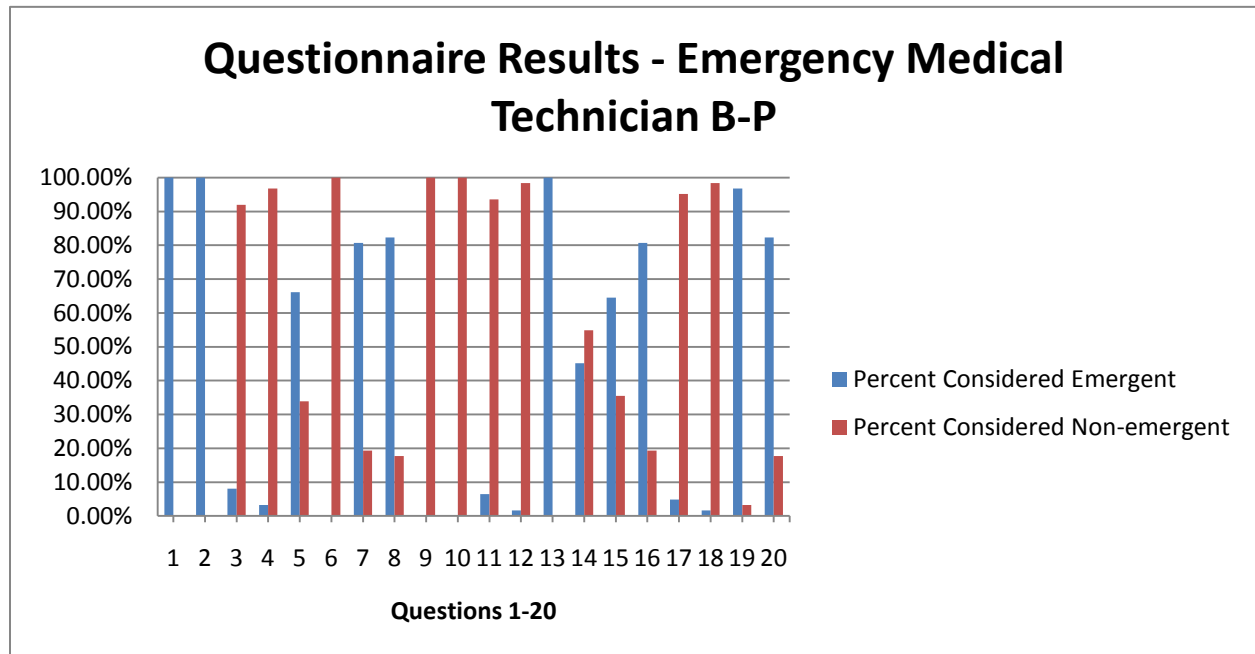
These results were compared to the answers received from 21 nursing home staff, nursing home medical professionals and retirement community staff seen in Table 4 on the following page.

Table 4



The final professional class consisted of a variety of medical technicians, ranging from class B to class P. Of the 62 technicians polled, the results are expressed in the following.

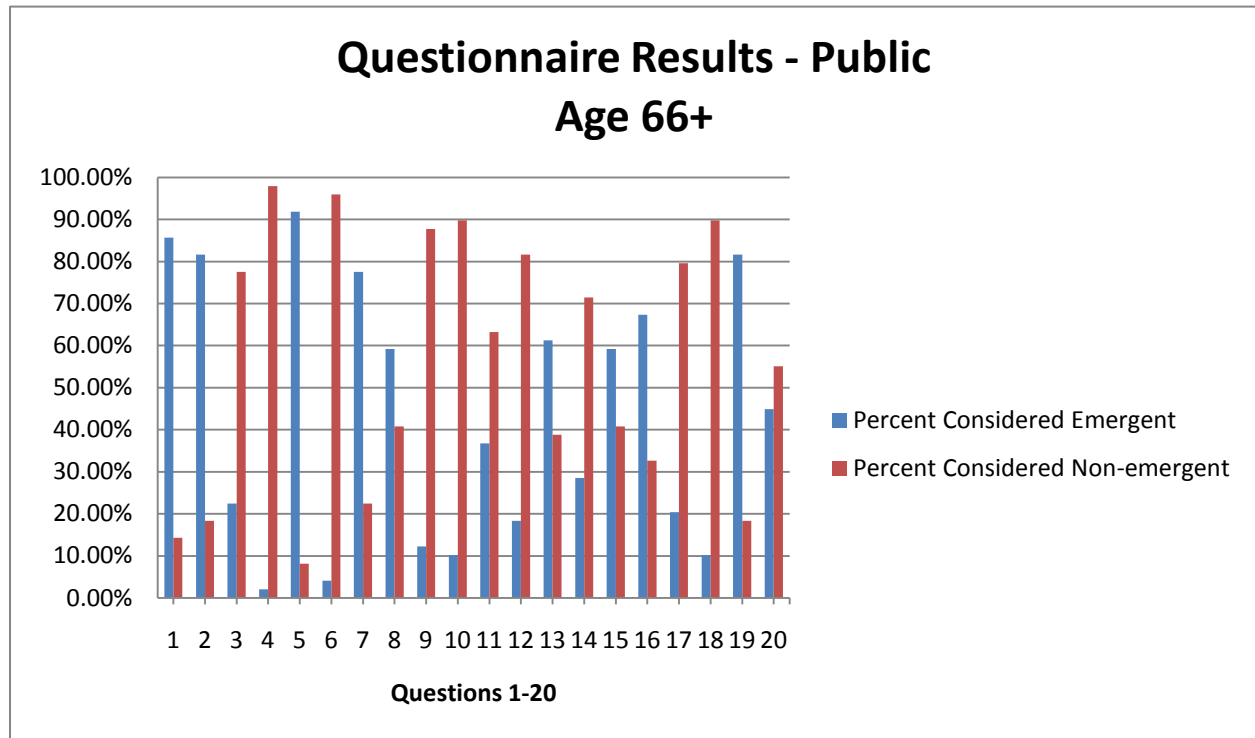
Table 5.



Along with the professional classes, the questionnaire was also given to the public.

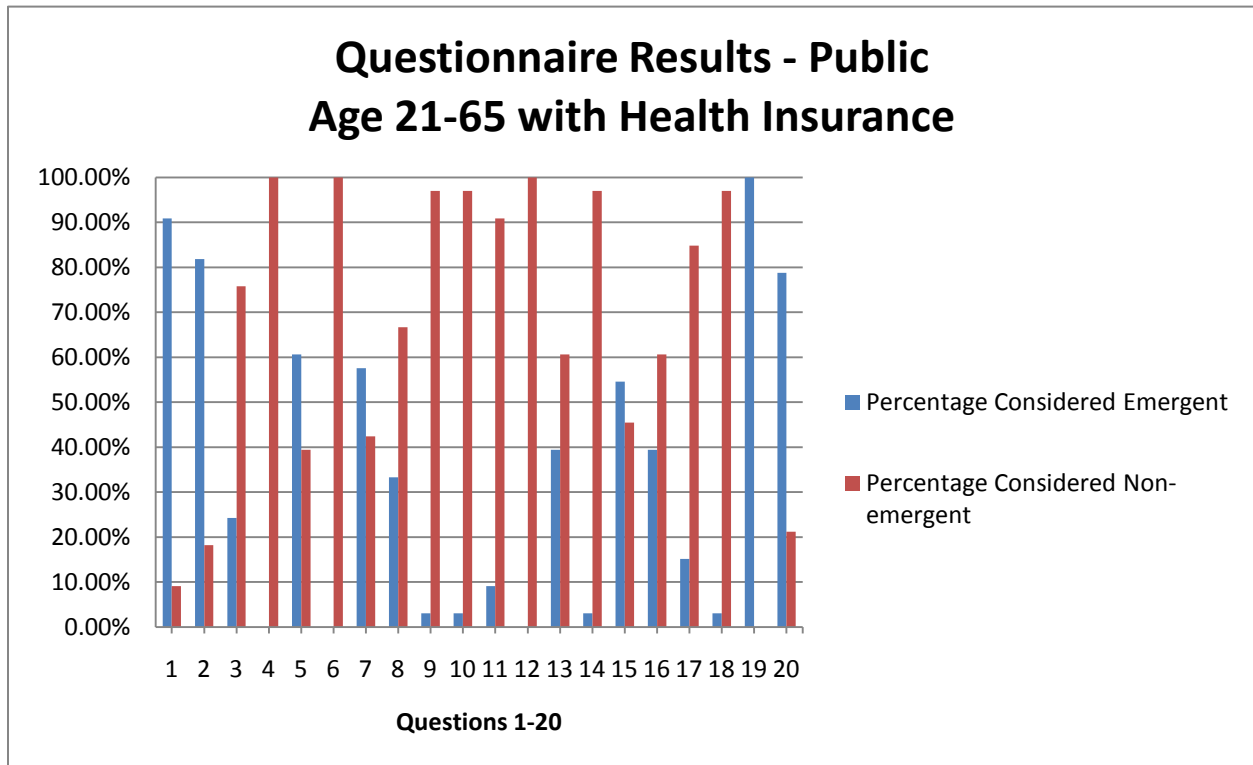
Keeping the same analysis process as the professional data, the public results were also separated into three classes in order to identify possible trends. The first group surveyed consisted of 49 members of the community 66 years of age and older. These results can be seen in Table 6 on the next page.

Table 6 -



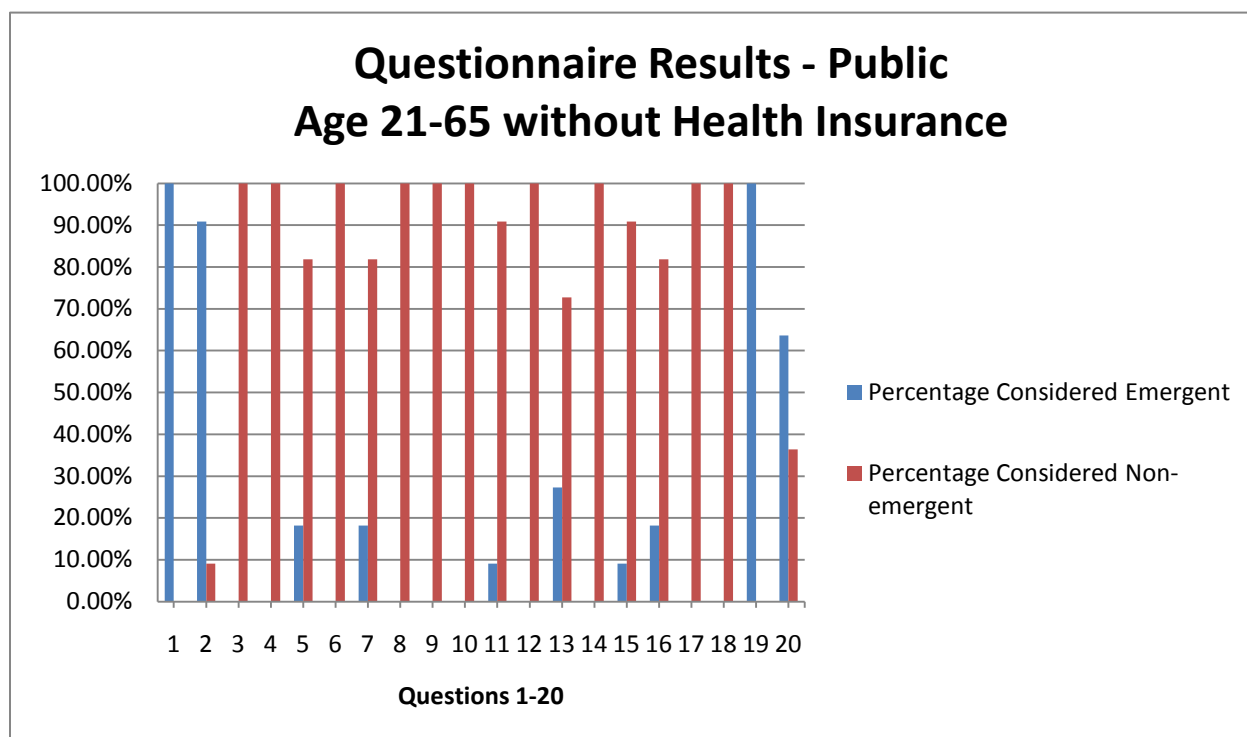
The second public category polled consisted of 33 citizens, ranging from the age of 21 to 65, who had active health insurance. This group's conclusions to the questionnaire are presented in Table 7 on the following page.

Table 7 -



The third and final public group consists of the same age bracket as the second group. The extenuating factor separating the two is the lack of health insurance. The third test group's results to the questionnaire can be viewed in Table 8, on the next page .

Table 8 -



Finally, the questionnaire results were compiled together in order to be analyzed. Percentage of "yes" answers received when asked if the situation described required a need for emergency medical service, can be seen in Table 9 below.

Table 9 - Percentage of questionnaire results considered emergent in nature

Question	Emergency Room Physicians	Nursing Home Staff and Professionals	Medical Technicians Class B-P	Public 66 + With Health Insurance	Public 21-65 With Health Insurance	Public 21-65 With No Health Insurance
1	100%	100%	100%	86%	91%	100%
2	100%	100%	100%	82%	82%	91%
3	13%	86%	8%	22%	24%	0%
4	0%	5%	3%	2%	0%	0%
5	81%	100%	66%	92%	61%	18%

6	6%	67%	0%	4%	0%	0%
7	69%	100%	81%	78%	58%	18%
8	75%	90%	82%	59%	33%	0%
9	6%	43%	0%	12%	3%	0%
10	0%	52%	0%	10%	3%	0%
11	0%	24%	6%	37%	9%	9%
12	0%	90%	2%	18%	0%	0%
13	100%	67%	100%	61%	39%	27%
14	63%	71%	45%	29%	3%	0%
15	75%	95%	65%	59%	55%	9%
16	88%	95%	81%	67%	39%	18%
17	6%	81%	5%	20%	15%	0%
18	6%	14%	2%	10%	3%	0%
19	100%	100%	97%	82%	100%	100%
20	100%	90%	82%	45%	79%	64%

Through analysis of the questionnaire results, as well as information received through literary research and multiple interviews, conclusions were made with respect to the original questions posed by this paper. Question 1 asked "How can Emergency Medical Service providers successfully differentiate between emergent and non-emergent medical calls for assistance?" With the results from the questionnaire, a definite distinction can be made between emergency and nonemergency situations. The questionnaire showed that the varying nature of the patient has more of an influence on determining the need for medical assistance than the actual symptoms they are experiencing. This deviation is predominantly seen in the results taken from nursing home staff and those members of the public without health insurance. These two groups are seen at opposite ends of the spectrum due to their differing situations with respect to the use of emergency medical service. The staff and professionals at a nursing home are more likely to consider a situation emergent in nature due to the already ailing nature of the majority of their patients. For example, a headache with blurred vision in a 90 year old patient is by far a

more concerning situation than if the same symptoms were seen in a 30 year old patient. This concern for their patients ensures that no liability can be put on their establishment due to the misidentification of life threatening symptoms. On the opposite side of the situation are those members of the public who are without health insurance. These individuals would be less likely to classify situations as a need for emergency medical services due to their inability to afford the bills they compile throughout the emergency medical response process. While both of these groups have skewed the results of the questionnaire, the implementation of an alternative to emergency medical services would benefit them both. These services would make medical situations easier on the elderly by having medical assistance come to the nursing home rather than putting them through the stress of a transport to the hospital. Those members of the public without health insurance would also reap the benefits provided by these services. In situations where individuals may have been hesitant to utilize emergency services, the purposed alternatives would allow for a more realistic option they could turn to in time of need.

The second question put forward by this paper was concerned with the expectations of the public with respect to emergency medical services asking "what types of medical services does the public expect to receive upon requesting the Emergency Medical Service?" Through decades of experience, the 9-1-1 system has evolved to become a system heavily relied upon by the public. This reliance comes with certain expectations that have been set on a national level as well as on a local level. This outlook upon the usage of emergency medical services seems to generally be the same across all groups that use the provided services, showing little difference between the judgement of medical professionals and the general public. The distinction that had

to be made was with concern to the relevant need for emergency medical service in these situations that have been determined by society to be emergent in nature. The truth of the matter is that most individuals, not taking into account age or the presence of health insurance, will call for an emergency response when there is no need for it. Therefore the only practical solution to this problem is to change the public's perspective of the duties of their local emergency services.

After identifying the expectations that the public hope to have met upon requesting emergency services, an answer had to be found for the third question of this paper; "why do citizens request non-emergent medical treatment from Emergency Medical Services?" Through research, many reasons have been found to explain why the public turns to the 9-1-1 system to fulfill their medical needs for nonemergency situations. Issues such as socioeconomic factors, race-based disparities and availability of health care force some individuals to turn to emergency services when their situations would be much better treated by nonemergency health professionals (Patterson, 2006). Other reasons include the removal of liability, in the case of most nursing home facilities, the inability to make contact with a private physician, which includes the lack of suitable medical assistance after normal business hours (LifeBot, n.d.). Partial blame for this situation must be placed upon the emergency workers themselves. After years of proclaiming "when you need help, call 9-1-1" the public has become accustomed to the behavior that if something bad happens, you call 9-1-1 and let the professionals deal with it. The term that is key in this discussion is the word professionals. Emergency workers have the training and knowledge of a vast array of situations, allowing them to be prepared for anything they may have to face in the field. This problem of people abusing the privilege of having these

men and women at their disposal is detrimental to the organization as a whole, leading to higher response times and sometimes even the inability to help at all when really needed.

All of the questions posed up to this point have served the purpose of support for the fourth question asked by this paper; "are there alternative approaches that will reduce the number of non-emergent Emergency Medical Service incidents, while meeting the public's needs for medical assistance?" A possible alternative can be found in Charlotte, North Carolina, where dispatch has been modified to assign priority levels to incoming calls. As explained by Bagwell and Keith (2009) the prioritizing of calls is broken down into the following categories with each response respectively:

- Delta - ALS emergency response
- Charlie - ALS non-emergency response
- Bravo - BLS emergency response
- Alpha - BLS non-emergency response
- Omega - Referred to alternative care

This type of telephone triage and similar systems, such as Advanced Medical Priority Dispatch System developed by Jeff Clawson, MD and the National Academies of Emergency Dispatch, are being put into use both domestically as well as on an international level (Cone et al., 2009, pp. 286). Along with telephone triage, some communities have put other alternatives in effect in an attempt to lower the burden of emergency workers. As explained by Dr. Mencl earlier, systems like those at Summa in Akron, Ohio, the hiring of additional health care professionals by individual hospitals has resolved overcrowding as well as substantially decreasing the amount

of time spent at hospital by emergency response teams. A combination of these two alternatives would ultimately lead to a resolution of the problem faced by the Copley Fire Department and if put into use on a national level, programs like these could eventually lead to the elimination of the abuse of emergency services by frequent flyers all together.

Discussion

The statement defined as an increase in non-emergent Emergency Medical Services incident volume is causing reduced emergency medical unit availability and increased emergency medical unit response time is not an isolated incident only seen by the Copley Fire Department but rather a national epidemic seen by emergency workers throughout the country (Nipps, 2009). Like other communities across the country, under the current tax revenue budget, the CFD is unable to support the purchase of additional medical units and hire the staff required for these units. The current incident volume combined, with the department's inability to provide additional medical units, will ultimately result in poor patient outcomes and an increase in liability. Similar to departments elsewhere, the CFD must bring about change in order to sustain the high level of service to which the township has grown accustomed. As seen in other communities across the country, the implementation of alternatives to emergency health care has not only benefited the departments who use them, but the general public as well (Diverting Frequent Flyers, 2008).

The first question which needs answered before putting these alternatives into operation is distinguishing the difference between emergency and nonemergency situations. An incident where a death occurs from a patient that was classified as non-emergent in nature would almost immediately put an end to any program put into effect by the CFD. Therefore, the need to

clearly distinguish between emergency and nonemergency circumstances is a must. What the public believes the 9-1-1 system is for varies only slightly from the beliefs of the majority of emergency healthcare professionals. However, this slight difference is where the division needs to be made, in order to prevent the unnecessary usage of emergency services. Due to the wide array of possible situations that could arise in a program like this, the final decision of whether or not a case is an emergency and what response needs to be taken will be made by the trained professionals in charge of maintaining the alternative healthcare program.

While the questionnaire only shows minor conceptual differences between what the public and health professionals deem as emergencies, the continuing usage of the emergency services by the public for non-emergent healthcare needs can be explained through several identifiable reasons. The predominant reason for nonemergency calls to emergency services is the lack of alternatives of healthcare services after normal business hours (Donatelli, 2010). If an individual is put into a situation where they must decide between calling 9-1-1 or waiting to see a doctor the next day, most people would take the precautionary route by contacting emergency services. This is a prime example of the need for alternatives to emergency medical services. Along with lack of access to healthcare services, the frequent flyer problem can also be explained by the number of individuals without active health insurance. Persons without health insurance will call 9-1-1 for nonemergency services due to their inability to pay for a routine doctor's appointment. The lack of active healthcare insurance seen in the public, along with other socioeconomic factors, as well as the inability to contact healthcare professionals after hours, explains the abuse of the 9-1-1 systems by the general public. While at fault for the majority of the problem, abuse of the

system is not limited to the general public, but can be seen in the professional world as well. Professionals working at nursing homes and retirement facilities are more likely to abuse the privilege of having emergency services at their disposal in order to avoid being liable in the case of mistreatment or even wrongful death of one of their patients. This can be seen in the high number of non-emergent calls that are made due to needs of the elderly, specifically those in nursing homes and other retirement centers (Shah et al., 2009).

As the cause of the problems has been identified, solutions to the problem can be proposed. These solutions include various alternatives to emergency healthcare that would act as a substitute for emergency services, satisfying the needs of society. One alternative being considered by the United Kingdom is setting aside 1-1-1 as a new nonemergency healthcare dispatch system, allowing the general public to have 24 hour assistance for any possible healthcare need (Directgov, 2009). This type of system or some other form of tele-triage would benefit the CFD, as it has many other departments, by decreasing the number of non-emergent calls answered by the 9-1-1 system (LifeBot, 2010). Another option for an alternative to emergency healthcare can be seen at the local Summa hospital in Akron. Through the hiring of in-house paramedics, the hospital has been able to increase the turn around time for emergency workers, allowing them to be more capable to respond new incoming calls (F. Mencl, personal communication, August 26, 2010). The ability of in-house paramedics to take patients off of the hands of transporting emergency workers is vital in the process of decreasing the response time of the CFD. Other alternatives can be seen throughout Europe, specifically in Amsterdam, where the use of a single person on non-transport vehicle is dispatched to assess the patient,

render minor in-home treatment, or assist with the scheduling of other medical appointments (Cone et al., 2009). Through one of these alternatives or a combination of the three, the CFD should be able to implement changes that will lead to the resolution of all them problems they are faced with.

Recommendations

The first step that needs to be taken in this evolutionary process by the Copley Fire Department is the continued pursuit of joint dispatch with other local fire departments. Twenty months ago, the CFD merged its dispatch with the fire department from the City of Norton, allowing for the possibility of support if needed for both departments. This merging of resources has led to another joining of local emergency services. The fire departments of Bath Township and the City of Fairlawn are in the process of becoming intertwined with the Copley Fire Department. This uniting of local fire departments negates the need for additional units by the CFD while maintaining the current budget level that prevented units from being hired originally.

The second process is completely new to the CFD, but will have the most impact on changing the way the department functions. Through the training of dispatchers to nationally recognized tele-triage standards, the Copley Fire Department will have an effective alternative to emergency healthcare services that will lower the number of non-emergent calls the department is dispatched for. These trained dispatchers will not just benefit the people of Copley Township, but all of the people in the partnered fire districts as well. The tele-triage system has been proven in other departments across the world to drastically decrease the number non-emergent calls received, just by giving the public an alternative healthcare option other than receiving treatment

from emergency workers. Once dispatchers have been trained, this system will immediately be put into effect, allowing for the quickest results and the most positive change for the department as a whole.

The third recommendation that is being proposed for the Copley Fire Department is the development of protocols that would allow for the CFD to perform more on-scene treatment and/or evaluation without transporting patients. With the help of Dr. Mencl and the Summa Health system, a procedure would be developed allowing for the treatment of patients without transport, leading to a drastic decrease in the number of nonemergency runs made by the members of the CFD. This partnership with Summa Health Care systems could eventually lead to the ability of local emergency departments to dispatch a paramedic, nurse practitioner or physician's assistant to retirement communities prior to transporting the patient to an emergency facility. With the utilization of these non-emergent healthcare professionals, the call level of nonemergency calls seen throughout the Copley Fire Department would dramatically decrease, solving the problem of what to do with frequent flyers. This process would then be finalized through the development of an evaluation system that would be used to determine the positives and negatives of the newly implemented system. Criteria would be set to identify any possible inadequacies that may occur during the beginning of this alternative to emergency healthcare.

The final process this researcher is recommending to the Copley Fire Department is the development of a petition to request the creation of a new seat on the Medicare/Medicaid advisory board. This new position could possibly enable healthcare systems to provide for paramedics, nurse practitioners or physician's assistants to bill for services rendered at a

patient's home or residence. By allowing these alternatives to be put into effect, those patients worried about financial support when dealing with healthcare situations would be provided an option that would allow for a professional healthcare response at a much lower cost than utilizing their local emergency services. Through the implementation of all of these proposed changes, the problems faced by the CFD; maintaining the current level of service while dealing with an increasing call volume and budget deficits felt throughout the township, will see a quick and efficient resolution.

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Appendix A

Public's View of Emergency Medical Services**Circle Age Range**

0-21 22-50 51-65 66 and over

Check the box(es) of the health insurance type(s) that best describes your situation.

☐ Medicare ☐ Medicaid ☐ Medicare supplemental ☐ Employer sponsored insurance ☐ No health insurance

Check the boxes next to the symptom or condition that best describes the need for emergency medical service.

1. ☐ Chest pain
2. ☐ Shortness of breath
3. ☐ Flu like symptoms and unable to contact primary physician
4. ☐ Swollen ankle after long walk
5. ☐ Deformed wrist from fall in bathroom
6. ☐ Tripped over carpet with no pain or complaints
7. ☐ Severe headache with blurred vision
8. ☐ General weakness
9. ☐ Inability to defecate for several days
10. ☐ Inability to urinate for several hours
11. ☐ Localized skeletal pain with inability to sleep
12. ☐ Unable to obtain transportation for a non-life threatening illness
13. ☐ Fall from single story roof (approximately 8')
14. ☐ Abnormal blood test
15. ☐ Blood in urine or stool
16. ☐ Psychological issues with suicidal thoughts
17. ☐ Psychological issues with no thoughts of suicide
18. ☐ Alcohol intoxication with vomiting
19. ☐ Child with an accidental poisoning
20. ☐ Elderly person with a sudden change in their mental capacity

Appendix B

Emergency Medical Professional**Circle Education Level**

EMT-B

EMT-I

EMT-P

ED RN

ED Physician

Check the boxes next to the symptom or condition that best describes the **need** for emergency medical service.

1. ☐ Chest pain
2. ☐ Shortness of breath
3. ☐ 35 year old male with flu like symptoms and unable to contact primary physician
4. ☐ Swollen right ankle after long walk
5. ☐ Deformed wrist from fall in bathroom
6. ☐ Elderly patient tripped over carpet with no pain or complaints
7. ☐ 25 year old male with severe headache with blurred vision
8. ☐ 55 year old female with general weakness
9. ☐ Inability to defecate for several days
10. ☐ Inability to urinate for several hours
11. ☐ Localized skeletal pain with inability to sleep
12. ☐ Unable to obtain transportation for a non-life threatening illness
13. ☐ Fall from single story roof (approximately 8')
14. ☐ Nursing home patient with an abnormal blood test
15. ☐ Blood in urine or stool with no other symptoms
16. ☐ Psychological issues with suicidal thoughts
17. ☐ Psychological issues with no thoughts of suicide
18. ☐ An alert patient with alcohol intoxication and vomiting
19. ☐ Child with an accidental poisoning
20. ☐ Elderly person with a sudden change in their mental capacity